January 31, 2000
Permit No. TA001RE

Work Plan for:
Borrow Materials Investigation – Tailings facility
(Study B.2 of Schedule for Development of Closeout Plan)
Molycorp, Inc. - Questa Division

1. Background, Rationale, Objectives and Timing

1.1 Background

On December 30, 1999 the New Mexico Mining and Minerals Division approved an extension for approval of the closeout plan for the tailings area. The extension included tasks yet to be completed. The borrow materials investigation work plan (Task B.2) is due January 31, 2000.

1.2. Rationale

Previous evaluations of covers for the tailings impoundments have demonstrated that quantities of cover materials are large and that there is a paucity of fine grained cover materials in the area. The primary candidate is the alluvium found on the tailings site and its suitability is being demonstrated by an extensive test plot program (Task A.2 of schedule for development of Closeout Plan).

The Borrow Materials Investigation at the tailings facility is designed to analyze materials available for a cover layer on the tailings, including the geochemical and geotechnical characteristics of the material. This information is important in order to ensure that the cover material will be stable, have the desired infiltration control characteristics and support a self-sustaining ecosystem upon closure of the facility.

1.3 Objective

The objective of the borrow materials work plan is to:

Identify alternative borrow material sources and establish the depth and characteristics of the candidate cover materials in these borrow areas.

Establish the geochemical and geotechnical characteristics of the borrow materials.

1.4 Timing

The work plan is submitted January 31, 2000 with a 30-day review and revision period. The work will take place from March 1 to April 30, 2000 with the report

submitted May 31, 2000. The projected hearing date for the revised closure plan (DP-933 modification) and the closeout plan is the end of July 2000.

2. Scope of work

2.1 Establishment of the depth and characteristics of the cover material in the borrow areas.

a) The on site areas available for borrow materials is known and has been indicated on a map submitted as part of the revised closure plan for DP-933 (Figure 4-1 Robertson Geoconsultants, Inc. Report 052004/1, April 1998). This area will be assessed and its surface mapped for general soil types. Several test pits (five or more to depths of about 12 feet using a backhoe) will be dug to investigate and sample the material available and visually evaluate the characteristics of the deposits. The number of test pits to be dug will depend on the results of the surface mapping and variability noted.

b) Additional areas that may be used for cover material will be noted. These areas are those that might be used for cover placement during the development of the tailings facility. The operations personnel at the tailings facility will be consulted to determine if there are areas that may be used that are separate from the area outlined in Figure 4-1 (April, 1998). When these areas are identified they will be surface mapped and test pits dug as described above.

c) The test pits will be inspected and logged by a specialist geotechnical engineer at the time of development of the test pit and representative samples will be collected. Standard soil classification, description and sampling methods will be used.

2.2 Establishment of geotechnical and geochemical characteristics of the borrow material.

a) Following surface mapping and digging, logging and sampling of test pits, a testing plan for establishing geotechnical and geochemical characteristics of the borrow material will be developed. The testing plan will be based on the variability of the areas and the classification noted during test pit evaluations.

The laboratory program for establishing the geotechnical and geochemical characteristics of the material will be as follows:

b) Soil Sampling and Testing (Geochemical):

i) Representative individual and composite samples will be selected. Standard soil analysis will be performed on the samples which may include: pH, electrical conductivity, magnesium, calcium, sodium, sodium absorption ratio, organic matter, nitrogen, phosphorous, potassium and others as necessary. No acid base accounting testing is deemed necessary.

ii) If deemed necessary and appropriate, samples will be taken in areas that are currently supporting plant growth at the tailings facility and used for comparison to potential borrow materials.

c) Soil Sampling and Testing (Geotechnical):

i) Particle size distribution will be analyzed and soils classified accordingly (± 8 samples).

ii) Petrological examination will be performed on two or three representative samples.

iii) Mineralogical examination will be performed on two or three representative samples.

iv) Standard Proctor compaction tests, falling head permeability tests and soil suction tests will be performed on approximately four samples to demonstrate the suitability of the material for the cover requirements identified from the cover materials test plot program (Task A.2 of schedule for development of the closeout plan).